

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015832**Date Inspected:** 26-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Jobsite**CWI Name:** See below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

On this date CALTRANS OSM Quality Assurance Inspector (QAI) Bert Madison was present at Yerba Buena Island in California between the times noted above for observations relative to the work being performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below.

- 1). OBG Field Splice 1W/2W Weld ID: F1, Face A
- 2). OBG Field Splice 4W/5W Weld ID: D1 & D2, Face B
- 3). OBG Field Splice 4W/5W Weld ID: F1, Face B
- 4). OBG Field Splice 5W/6W Weld ID: A1, A3, A4, A5 Face A (QC MT)
- 5). OBG Field Splice 5W/6W Weld ID: A1, A3, A4, A5 Face A (QC UT)
- 6). OBG Field Splice 5W/6W Weld ID: A1 & A5, Face A (R-2 repair)
- 7). OBG Field Splice 5W/6W Weld ID: B1, Face A

- 1). OBG Field Splice 1W/2W Weld ID: F1, Face A

The QAI periodically observed AB/F approved welder Fred Kaddu (ID 2188) grinding to excavate (1) one area of burn-through on the A face of the OBG Field Splice 1W/2W Weld ID: F1 and subsequently performing repair welding of the excavated area per the Shielded Metal Arc Welding (SMAW) process in the 3G (vertical) position. QC Inspector Steve McConnel was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1. 5-1000-Repair. The repair welding was completed and the work at this location appeared to be in general compliance with contract documents..

- 2). OBG Field Splice 4W/5W Weld ID: D1 & D2, Face B

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The QAI periodically observed AB/F personnel performing plasma cutting to remove the backing bar from the outside groove to prepare for back welding. The work at this location was not completed during this shift.

3). OBG Field Splice 4W/5W Weld ID: F, Face B

The QAI periodically observed the in process welding of the OBG Field Splice 4W/5W weld ID: F1 Face B per the Flux Cored Welding (FCAW-G) process in the 3G (vertical) position by approved AB/F welding personnel Hua Quiang Hwang (ID 2930). See photo below. The SE QC Inspector Tom Pasqualone was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-3110-3. The QAI observed that QC Mr. Pasqualone obtained the following welding parameters: welding Amps = 225, welding Volts = 21. Welding of the fill and cover passes was completed and work at this location appeared to be in general compliance with contract documents.

4). OBG Field Splice 5W/6W Weld ID: A1, A3, A4, A5 Face A (QC MT)

The QAI observed SE QC Inspector Tony Sherwood performing Magnetic Particle Testing (MT) of the completed repair cycle one (R-1) repair locations from the A Face of OBG Field Splice 5W/6W Weld ID: A1, A3, A4 & A5. The QAI observed that the performance and evaluation of the MT appeared to comply with the MT procedure identified as SE-MT-CT-D1.5-101 Rev. 4.

5). OBG Field Splice 5W/6W Weld ID: A1, A3, A4, A5 Face A (QC UT)

The QAI periodically observed SE QC Inspector Steve McConnel performing Ultrasonic Testing (UT) of R-1 repair locations from the A Face of OBG Field Splice 5W/6W Weld ID: A1, A3, A4 & A5. Mr. McConnel utilized the UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 during the examination of UT repairs in the splice weld. The QC technician performed the required shear wave testing during the testing for weld soundness utilizing a .63 x .75 rectangular transducer. See photo below. The UT examination was completed from face A during this shift and the QAI observed that the QC inspector had marked two rejectable indications on the steel, one on weld A1 and one on weld A4.

6). OBG Field Splice 5W/6W Weld ID: A1 & A4, Face A (R-2 repair)

The QAI periodically observed AB/F approved welder James Zhen (ID 6001) performing excavation by grinding of the (2) two R-2 repair areas identified by QC Steve McConnel. The QAI observed QC Inspector Tony Sherwood performing MT of the R-2 repair excavations prior to the commencement of welding. The QAI observed that the performance and evaluation of the MT appeared to comply with the MT procedure identified as SE-MT-CT-D1.5-101 Rev. 4. The QAI periodically observed AB/F approved welder James Zhen (ID 6001) performing repair welding of the two excavated areas per the Shielded Metal Arc Welding (SMAW) process. QC Inspector Tony Sherwood was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure Specification (WPS) identified as ABF-WPS-D1.5-1001-Repair. The repair welding was completed and the work at this location appeared to be in general compliance with contract documents.

7). OBG Field Splice 5W/6W Weld ID: B1, Face A

The QAI periodically observed AB/F approved welder Xiao Jian Wan (ID 9677) positioning the Proheat 35 Induction Heating System element to preheat from the A face prior to performing FCAW-G on the A face of OBG Field Splice 5W/6W Weld ID: B1. SE QC Inspector Tony Sherwood was present to monitor the progress and verify that the welding parameters were within the limits established by the approved welding Procedure

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Specification (WPS) identified as ABF-WPS-D1.5-3040B-3. The QAI observed welder Xiao Jian Wan welding on a test piece as Mr. Sherwood measured the welding parameters in order to set the welding machine. Mr. Sherwood obtained the following welding parameters: welding amps = 235, welding volts = 21. The QAI later went to the B face of weld B1 to check for the presence of adequate preheat using 66°C & 100°C Tempilstick® temperature indicating markers. The QAI observed that the 5W side of the CJP splice was at or above 100°C but the backing bar and the 6W side of the splice were not at or above 100°C. The QAI returned to the A face and spoke with the QC inspector Mr. Sherwood. See the Summary of Conversations below. After the preheating element was re-positioned and minimum preheat was achieved, the welding commenced and welding was in process for the duration of the QA Inspectors shift. The work at this location appeared to be in general compliance with contract documents.



Summary of Conversations:

From item 7). The QAI asked the QC Mr. Sherwood if he was aware of the Special Provisions requirements regarding welds requiring preheat temperatures greater than 65°C. The QC inspector stated that he was aware of them. The QAI informed the QC Mr. Sherwood of the observed situation with the preheat at face B of weld B1. Mr. Sherwood looked into the welding enclosure at the A face and observed that the welder had installed the heating element on the 5W side of the splice weld instead of directly over it. The welder stated that he would complete the preheat with the propane torch. QC Mr. Sherwood stated that the entire weld joint would have to be at or above the minimum preheat temperature prior to striking an arc. Welder James Zhen (ID 6001) arrived and with welder Xiao Jian Wan (ID 9677) they re-positioned the heating element directly over the joint.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammed Fatemi (916) 813 3677, who represents the Office of Structural Materials for your project.

Inspected By:	Madison,Bert	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer